

Algebra (percentages)

Percent

Write each percent as a fraction in simplest form.

1. 41%	2. 980%	3. 50%
$\frac{41}{100}$	$\frac{980}{100} = \frac{2 \cdot 2 \cdot 5 \cdot 7 \cdot 7}{2 \cdot 2 \cdot 5 \cdot 5}$ $\frac{49}{5}$	$\frac{1}{2}$

Write each percent as a decimal.

4. 19%	5. 84.8%	6. 30.2%
0.19	0.848	0.302

Write each decimal as a percent.

7. 0.3	8. 5.420	9. 0.385
30%	542%	38.5%

Write each fraction as a percent. Round to the nearest hundredth of a percent.

10. $\frac{89}{100}$	11. $\frac{21}{5}$	12. $\frac{1}{2}$	13. $\frac{1}{5}$
89%	420%	50%	20%

Write each fraction as a percent. Round to the nearest hundredth of a percent.

14. $\frac{15}{16}$	15. $\frac{5}{6}$	16. $\frac{63}{10}$	17. $\frac{3}{4}$
93.75%	83.3%	630%	75%

Complete. Numbers are rounded to the nearest hundredth of a percent.

18. percent 560% fraction _____ $\frac{28}{5}$	19. $\frac{1}{5}$ fraction $\frac{1}{5}$ percent _____ 20%	20. $\frac{7}{8}$ fraction $\frac{7}{8}$ decimal _____ 0.88
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Complete. Numbers are rounded to the nearest hundredth of a percent.

21. fraction _____ decimal _____ percent 39% $\frac{39}{100}$.39 39%	22. fraction _____ decimal 0.7 percent 70% $\frac{7}{10}$.7	23. $\frac{1}{2}$ fraction $\frac{1}{2}$ decimal _____ percent _____ $\frac{1}{2}$.5
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Find the percent of each number.

24. 89% of 47 41.83	25. 232% of 132 306.24	26. 20% of 130 26
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IN ORDER TO FIND WHAT PERCENTAGE ONE NUMBER is of another number divide the part by the whole
Complete. Round your answer to the nearest tenth.

27. 110% of 8038 is what number?

$$\frac{P}{8038} = 110\%$$

$$\frac{P}{8038} = 1.10 \times 8038$$

$$P = 1.10 \times 8038$$

$$P = 8841.8$$

28. 90% of what number is 414?

$$\frac{414}{W} = 90\%$$

$$W \cdot \frac{414}{W} = .90 \cdot W$$

$$.9 \cdot \frac{414}{.9} = .9W$$

$$460 = W$$

Find each percent of change. Round your answer to the nearest tenth of a percent.

29. 220 is increased to 286

$$\frac{286}{220} = \frac{66}{220} = .30$$

30%

30. 270 is decreased to 216

$$\frac{270}{216} = \frac{54}{270} = .20$$

20%

Fill in the missing value. Assume simple interest.

$$I = Prt$$

31. principal 89,916
interest rate 13%
time 3 years
simple interest \$35,067.24

$$35067.24 = 89916 \times .13 \times 3$$

$$I = Prt$$

$$35067.24 = 89916 \times .13 \times 3$$

32. principal \$16,411
interest rate 5%
time 2 years
simple interest \$1,641.10

$$t = \frac{I}{(P \times r)}$$

$$t = \frac{1641.10}{(16411 \times .05)}$$

$$t \approx 2 \text{ years}$$

Fill in the missing value. Assume simple interest.

33.	principal	96825	34.	principal	\$952,066
	interest rate	10.48%		interest rate	11.11%
	time	58 months		time	17 month
	simple interest	\$49,045.09		simple interest	\$149,847.25

$I = P \times R \times T$
 $49045.09 = 96825 \times 10.48\% \times T$

$t = \frac{I}{(P \times R)}$
 $t = \frac{149,847.25}{(952,066 \times 0.1111)} = X \times 12 = 17 \text{ months}$

Complete.

35. Scientists estimate that the average annual temperature in Bigtown has increased by two and six tenths percent over the past century. If the current average annual temperature in Bigtown is 15.4°C , what must the average temperature have been 100 years ago? Round your answer to the nearest hundredth of a degree.

Temp increased by $2\frac{6}{10}\%$

$2\frac{6}{10}\% = 2.6\% = 0.026$

% of X is n

$\frac{\%}{100\%} \times X = n$

$(1 + 0.026) \times X = 15.4^{\circ}\text{C}$

$1.026 \times X = 15.4^{\circ}\text{C}$

$\frac{1.026}{1.026} \times X = \frac{15.4^{\circ}\text{C}}{1.026}$

$X = 15.00974$

$X \approx 15.01^{\circ}\text{C}$

36. Nicole's mother is a nurse. She came to school to check our posture and our backs. She told us that about 4.9% of children have a problem called scoliosis. There are one hundred forty-five students in our school. If our school is like the average, how many children will have scoliosis? Express your answer to the nearest whole number.

$4.9\% = 0.049$

$0.049 \times 145 = 7.107$

$= 7 \text{ children}$

Solved by
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